IN THE TITLE

Please amend the title as follows:

~~Principle~~ Principal Component Analysis Based Fault Classification

IN THE SPECIFICATION

Please amend the specification as follows:

The paragraph beginning at page 1, paragraph 1, line 2 is amended as follows:

[0001] The present invention relates to fault classification, and in particular to ~~principle~~ principal component analysis based fault classification for a process.

The paragraph beginning at page 1, paragraph 3, line 1 is amended as follows:

[0003] ~~Principle~~ Principal Component Analysis (PCA) is used to model a process, and clustering techniques are used to group excursions representative of events based on sensor residuals of the PCA model. The PCA model is trained on normal data, and then run on historical data that includes both normal data, and data that contains events. Bad actor data for the events is identified by excursions in Q (residual error) and T2 (unusual variance) statistics from the normal model, resulting in a temporal sequence of bad actor vectors. Clusters of bad actor patterns that resemble one another are formed and then associated with events.

The paragraph beginning at page 4, paragraph 16, line 1 is amended as follows:

[0016] In one embodiment, a ~~principle~~ principal component analysis (PCA) model 130 is coupled to the controller 120, and receives the values of the sensors at predetermined times. The time is at one-minute intervals for some processes, but may be varied, such as for processes that may change more quickly or slowly with time. PCA is a well known mathematical model that is

designed to reduce the large dimensionality of a data space of observed variables to a smaller intrinsic dimensionality of feature space (independent variables), which are needed to describe the data economically. This is the case when there is a strong correlation between observed variables.

Conclusion

Applicant respectfully requests that the response to the non-compliant amendment described herein be entered into the record prior to examination and consideration of the above-identified application.

If necessary, please charge any additional fees or credit overpayment to Deposit Account No. 19-0743.

Respectfully Submitted,

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By their Representatives,

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Date 10/20/2004 By _____
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CERTIFICATE UNDER 37 CFR § 1.8: The undersigned hereby certifies that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail, in an envelop addressed to: MS Amendment, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on this 20 day of October 2004.

Name Gina M. Uphus Signature _____